

CLAIMS:

1. A method comprising:
storing routing information mapping destinations to routes within a network;
5 storing a set of routing rules;
receiving a network communication comprising destination information and data;
comparing at least a portion of the data to the set of routing rules;
selecting a route from the routing information based on the destination information of
the network communication and a result of the comparison; and
10 forwarding the network communication according to the selected route.
2. The method of claim 1, wherein the network comprises a medical imaging network
and the network communication complies with the DICOM protocol, and further wherein
storing routing information comprises storing routing information mapping Application
15 Entity Names (AENames) to routes within the medical imaging network.
3. The method of claim 2, wherein selecting a route from the routing information
comprises comparing an AENAME defined within the network communication to the
AENAME defined within the routing information.
4. The method of claim 1, wherein the network communication complies with the
DICOM protocol, and further wherein comparing at least a portion of the medical imaging
data comprises:
20 parsing the medical imaging data to identify a set of DICOM tags and corresponding
25 data; and
assessing a routing rule from the set of routing rules based on the DICOM tags and
corresponding data.
5. The method of claim 1, wherein storing a set of routing rules comprises storing an
30 XML-based set of rules, wherein the rules conform to a user-defined grammar for routing the
medical imaging data.

6. The method of claim 5, further comprising presenting an interface for receiving user input that defines the user-defined grammar.

5 7. A router comprising:

a computer-readable medium storing routing information mapping destinations to routes within a medical imaging network, and storing a set of routing rules; and

10 a routing module that selects a route from the routing information based on destination information of a network communication and a comparison of medical imaging data of the network communication to the set of routing rules.

15 8. The router of claim 7, wherein the routing information maps DICOM Application Entity Names (AENames) to routes within the medical imaging network.

9. The router of claim 7, wherein the routing module parses the medical imaging data to identify a set of DICOM tags and corresponding data, and assesses the routing rules based on the DICOM tags and corresponding data.

20 10. The router of claim 7, wherein the set of rules includes rules defined by the eXtensible Markup Language (XML), and which conform to a user-defined grammar for routing the medical imaging data.

25 11. The router of claim 10, further comprising a user interface for presenting an interface for receiving user input that defines the user-defined grammar and the rules.

30 12. A computer-readable medium storing data comprising routing information mapping destinations to routes within a medical imaging network, wherein the routing information maps DICOM Application Entity Names (AENames) to routes within the medical imaging network.

13. The computer-readable medium of claim 12, further storing a set of routing rules, wherein the set of rules includes rules defined by the eXtensible Markup Language (XML), and which conform to a user-defined grammar for routing the medical imaging data.

5 14. A computer-readable medium having instructions thereon to cause a programmable processor to:

store routing information mapping destinations to routes within a medical imaging network;

store a set of routing rules;

10 receive a network communication comprising destination information and medical imaging data;

compare at least a portion of the medical imaging data to the set of routing rules;

select a route from the routing information based on the destination information of the network communication and a result of the comparison; and

15 forward the network communication according to the selected route.

15. The computer-readable medium of claim 14, wherein the network communication complies with the DICOM protocol, and further wherein the instructions cause the processor to store routing information mapping Application Entity Names (AENames) to routes within the medical imaging network.

16. The computer-readable of claim 15, wherein the instructions cause the processor to compare an AENAME defined within the network communication to the AENAME defined within the routing information.

25 17. The computer-readable of claim 16, wherein the instructions cause the processor to: parse the medical imaging data to identify a set of DICOM tags and corresponding data; and

assess the routing rules based on the DICOM tags and corresponding data.

30 18. A method comprising:

receiving user input defining routing information;
generating a rule in Extensible Markup Language (XML) format based on the routing
information;
storing the XML-based rule in a rule set;
5 receiving a network communication comprising medical imaging data;
assessing the XML-based rule based on at least a portion of the medical imaging data;
and
routing the network communication based on the assessment of the XML-based rule.

10 19. The method of claim 18, wherein the user input defines a grammar for routing
medical images within a medical imaging environment.

20. The method of claim 18, wherein the user input defines tags including a patient
identifier, an imaging modality.

15 22. A method comprising:
detecting medical imaging application information for a first domain within a medical
imaging network;
receiving a network message having a destination within the first domain;
20 translating application information within the network message to the application
information for the first network domain; and
forwarding the network message to the destination.

25 23. The method of claim 22, wherein detecting medical imaging application information
includes establishing a temporary association with a medical imaging device within the first
domain.

30 24. The method of claim 22, wherein detecting the medical imaging application
information includes detecting an Application Entity Title (AETitle), a DICOM version and a
unique identifier (UID).

25. The method of claim 22, wherein translating the application information includes parsing data within the network message to identify the application information of network message.

5 26. A method comprising:
receiving examination information for a patient;
examining routing information within a network router to identify storage systems
within a network; and
retrieving medical imaging data from the identified storage systems prior to an
10 examination of the patient.

27. The method of claim 26, wherein retrieving the medical imaging data comprises
issuing move commands requesting the identified storage systems move the medical imaging
data to a destination device.

15 28. The method of claim 27, wherein the destination device comprises a medical imaging
modality.

20 29. The method of claim 26, wherein retrieving the medical imaging data comprises:
scheduling a pre-fetch operation based on the exam information; and
issuing move commands based on the scheduled pre-fetch operation.

25 30. The method of claim 29, further comprising issuing queries to the identified storage
systems to locate storage assets relating to a patient.

31. The method of claim 30, wherein issuing queries comprises issuing CFIND
commands according to the DICOM protocol.

30 32. The method of claim 30, further comprising selecting at least one of the storage
systems based on characteristics of a network link between the selected storage system and a
destination device.

33. A router comprising:

a computer-readable medium storing routing information mapping destinations to routes within a medical imaging network; and

a patient management module to receive examination information for a patient, and to retrieve medical imaging data prior to an examination of the patient based on the routing information.

34. The router of claim 33, wherein the patient management module examines the routing information to identify storage systems within the medical imaging network.

35. The router of claim 34, wherein the patient management module schedules a pre-fetch operation based on the examination information, and issues move commands based on the scheduled pre-fetch operation.

36. The router of claim 35, wherein the patient management module issues queries to the identified storage systems to locate storage assets relating to a patient.

37. The router of claim 36, wherein the patient management module issues CFIND commands according to the DICOM protocol.

38. A method comprising:

receiving a request for an asset;

determining a global unique identifier (GUID) associated with the requested asset;

examining routing information to identify storage systems within a network;

issuing queries to the storage system to determine which storage systems have a local copy of the requested asset, wherein the queries include the associated GUID; and

selectively retrieving one of the local copies of the requested asset.

39. The method of claim 38, further comprising:

receiving a new storage asset from a medical imaging modality; and

assigning the global unique identifier (GUID).

40. The method of claim 38, wherein selectively retrieving the requested asset comprises issuing a DICOM MOVE command to one of the storage systems.

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41. The method of claim 38, wherein selectively retrieving the patient information comprises selecting one of the storage systems based on a characteristic of a connection between the storage system and a requesting device.

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